

Claims

1. Method for decoding a data sequence which consists of K information bits and has been encoded with the aid of a binary convolutional code,

5 - wherein, on a trellis diagram having trellis segments, in a first operation metrics values of all trellis segments are calculated precisely for a forward direction and for a backward direction using a MaxLogMAP algorithm,

10 - wherein a number of trellis segments are selected as interpolation nodes of the first operation and associated metrics values are stored in a first memory level,

15 - wherein with $1 < i \leq n$ in an i-th operation metrics values of trellis segments positioned between the interpolation nodes of an i-1-th operation are calculated for both directions, stored metrics values of interpolation nodes of the i-1-th operation being used to calculate the metrics values of the i-th operation,

20 - wherein a number of trellis segments are selected as interpolation nodes of the i-th operation and associated metrics values are stored in an i-th memory level,

25 - wherein the metrics value calculation and storage based on the interpolation nodes takes place n times until the metrics value calculations of the forward direction and of the backward direction meet in one trellis segment and a decision process is then carried out to calculate soft output values for decoding purposes.

2. Method according to Claim 1, wherein for each direction of the

30 first memory level a memory depth of δ_1 is assigned, the respective metrics values of each K/δ_1 -th trellis segment being stored in the first memory level.

3. Method according to Claim 1 or 2, wherein for each direction of

35 the i-th memory level a memory depth of δ_i is assigned, the re-

spective metrics values of each $K/\delta_1/\dots/\delta_i$ -th trellis segment being stored in the i -th memory level.

4. Method according to one of the preceding claims, wherein a delayed decision phase is used for the calculation of the soft output values in the case of terminated codes.

5. Method according to one of the preceding claims, wherein the decoding is carried out on precisely one application-specific module.

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